

WHAT IS CLAIMED IS:

1. A method for providing the location information of a mobile station(MS) by selectively using a data burst message(DBM)-based method and a TCP/IP(Transmission Control Protocol/Internet Protocol)-based method based on a global positioning system(GPS) in a mobile telecommunication network, constituted of a client server, a mobile positioning center(MPC), a home location register(HLR), and a position determination Entity(PDE), comprising the steps of:

a terminal connecting to a client sever for being provided a location based service(LBS);

said client sever carrying out an authentication and deciding to select a method among a DBM-based method and a TCP/IP-based method;

in case of a TCP/IP-based method being selected, said client sever transmitting a PDE URL to MS, and then sending an information by a signal to MPC; and in case of a DBM-based method being selected, said client sever sending an information by a signal to MPC;

said MPC transmitting a request signal for the information of said MS to HLR and receiving the

response;

after receiving said response, said MPC transmitting
a signal, containing the corresponding information,
to PDE;

5 said PDE obtaining the location information of said
MS from said MS by the selected type of method; and
said PDE transmitting the obtained location
information of said MS to said client sever through
said MPC.

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2. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim 1,

characterized in that said terminal connecting to
15 said client server is a terminal able to connect to
a client server using a wireless application
protocol(WAP) such as a cellular phone, a personal
digital assistant(PDA), or the like.

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3. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim 1,

characterized in that, in said step of deciding to
select a method among a DBM-based method and a
25 TCP/IP-based method, said client server decides to

select a TCP/IP-based method if said terminal
connected to said client server is identical to
said MS whose location information is to be
provided, and otherwise, said client server decides
5 to select a DBM-based method.

4. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim 1,
10 characterized in that, in said step of transmitting a
PDE URL to said MS in case of TCP/IP-based method
being selected, said client sever transmits said
PDE URL to said MS through the communication line,
using WAP, established already.

15 5. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim 1,
characterized in that, in said step of transmitting a
20 PDE URL to said MS in case of TCP/IP-based method
being selected, said client sever transmits said
PDE URL to said MS using a short message
service(SMS).

25 6. A method for providing the location information

of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 1,

characterized in that said signal, sent to said MPC, from said client server contains the information on the selected type of method for providing the service.

7. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 1,

characterized in that said information of MS, requested by said MPC to said HLR, contains the number of said MS and the information on the mobile switching center(MSC) controlling said MS.

8. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 1,

characterized in that said corresponding information contained in said signal, being transmitted from said MPC to said PDE after said MPC receiving said response from said HLR, contains the information on the type of method selected by said client server and the information on the mobile switching center(MSC) controlling said MS.

9. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 1,

5 characterized in that said step of said PDE obtaining the location information of said MS from said MS by the selected type of method comprises the steps of:
in case that said selected type of method is a DBM-based method, said PDE that received said signal
10 transmitted by said MPC requesting a GPS location information of said MS to said MS; and
said MS that received said request transmitting the GPS location information to said PDE.

15 10. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 9,

characterized in that the transmission/reception of the information between said PDE and said MS is
20 being carried out by SMS-based communication complying with IS-801-1 standard.

11. A method for providing the location information of an MS by selectively using a DBM-based method and a
25 TCP/IP-based method as claimed in Claim 1,

characterized in that said step of said PDE obtaining
the location information of said MS from said MS by
the selected type of method comprises the steps of:
in case that said selected type of method is a
5 TCP/IP-based method, said MS that received a PDE
URL from said client server connecting to said PDE
by using said PDE URL; and
said MS that connected to said PDE providing its own
GPS location information to said PDE.

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12. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **11**,

characterized in that said step of said MS that
15 received a PDE URL from said client server
connecting to said PDE by using said PDE URL
includes the step of said PDE that received a
signal transmitted by said MPC waiting for said
connection by said MS.

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13. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **11**,

characterized in that said step of said MS that
25 connected to said PDE providing its own GPS

location information to said PDE comprises the steps of:
said PDE requesting a GPS location information to said MS connected to said PDE; and
5 said MS providing the GPS location information to said PDE in response to said request.

14. A method for providing the location information of an MS by selectively using a DBM-based method and a
10 TCP/IP-based method as claimed in Claim **11**,
characterized in that the transmission/reception of the information between said PDE and said MS is being carried out by TCP/IP-based communication complying with IS-801-1 standard.

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15. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **1**,
characterized by further comprising, after the step
20 of said PDE transmitting the location information of said MS to said client sever through said MPC, the step of providing a corresponding location based service(LBS) requested by said terminal connected to said client server by using said
25 location information of said MS received by said

client sever.

16. A method for providing the location information
of a mobile station(MS) by selectively using a data
5 burst message(DBM)-based method and a
TCP/IP(Transmission Control Protocol/Internet
Protocol)-based method based on a global positioning
system(GPS) in a mobile telecommunication network,
constituted of a client sever, a mobile positioning
10 center(MPC), a home location register(HLR), and a
position determination Entity(PDE), comprising the
steps of:

a terminal connecting to a client sever for being
provided a location based service(LBS);
15 said client sever carrying out an authentication and
deciding to select a method among a DBM-based
method and a TCP/IP-based method;
in case of a TCP/IP-based method being selected, said
client sever sending an information by a signal to
20 MPC, and then transmitting a PDE URL to MS; and in
case of a DBM-based method being selected, said
client sever sending an information by a signal to
MPC;
said MPC transmitting a request signal for the
25 information of said MS to HLR and receiving the

response;

after receiving said response, said MPC transmitting
a signal, containing the corresponding information,
to PDE;

5 said PDE obtaining the location information of said
MS from said MS by the selected type of method; and
said PDE transmitting the obtained location
information of said MS to said client sever through
said MPC.

10 **17.** A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **16**,

characterized in that said terminal connecting to
15 said client server is a terminal able to connect to
a client server using a wireless application
protocol(WAP) such as a cellular phone, a personal
digital assistant(PDA), or the like.

20 **18.** A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **16**,

characterized in that, in said step of deciding to

select a method among a DBM-based method and a

25 TCP/IP-based method, said client server decides to

select a TCP/IP-based method if said terminal
connected to said client server is identical to
said MS whose location information is to be
provided, and otherwise, said client server decides
5 to select a DBM-based method.

19. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **16**,
10 characterized in that, in said step of transmitting a
PDE URL to said MS in case of TCP/IP-based method
being selected, said client sever transmits said
PDE URL to said MS through the communication line,
using WAP, established already.

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20. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **16**,
characterized in that, in said step of transmitting a
20 PDE URL to said MS in case of TCP/IP-based method
being selected, said client sever transmits said
PDE URL to said MS using a short message
service(SMS).

25 **21.** A method for providing the location information

of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 16,

characterized in that said signal, sent to said MPC, from said client server contains the information on the selected type of method for providing the service.

22. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 16,

characterized in that said information of MS, requested by said MPC to said HLR, contains the number of said MS and the information on the mobile switching center(MSC) controlling said MS.

23. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim 16,

characterized in that said corresponding information contained in said signal, being transmitted from said MPC to said PDE after said MPC receiving said response from said HLR, contains the information on the type of method selected by said client server and the information on the mobile switching center(MSC) controlling said MS.

24. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **16**,

characterized in that said step of said PDE obtaining

5 the location information of said MS from said MS by

the selected type of method comprises the steps of:

in case that said selected type of method is a DBM-

based method, said PDE that received said signal

transmitted by said MPC requesting a GPS location

10 information of said MS to said MS; and

said MS that received said request transmitting the

GPS location information to said PDE.

25. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **24**,

characterized in that the transmission/reception of

the information between said PDE and said MS is

being carried out by SMS-based communication

20 complying with IS-801-1 standard.

26. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **16**,

25 characterized in that said step of said PDE obtaining

the location information of said MS from said MS by
the selected type of method comprises the steps of:
in case that said selected type of method is a
TCP/IP-based method, said MS that received a PDE
5 URL from said client server connecting to said PDE
by using said PDE URL; and
said MS that connected to said PDE providing its own
GPS location information to said PDE.

10 **27.** A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **26**,

characterized in that said step of said MS that
received a PDE URL from said client server
15 connecting to said PDE by using said PDE URL
includes the step of said PDE that received a
signal transmitted by said MPC waiting for said
connection by said MS.

20 **28.** A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **26**,

characterized in that said step of said MS that
connected to said PDE providing its own GPS
25 location information to said PDE comprises the

steps of:

said PDE requesting a GPS location information to
said MS connected to said PDE; and
said MS providing the GPS location information to
5 said PDE in response to said request.

29. A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **26**,

10 characterized in that the transmission/reception of
the information between said PDE and said MS is
being carried out by TCP/IP-based communication
complying with IS-801-1 standard.

15 **30.** A method for providing the location information
of an MS by selectively using a DBM-based method and a
TCP/IP-based method as claimed in Claim **16**,

characterized by further comprising, after the step
of said PDE transmitting the location information
20 of said MS to said client sever through said MPC,
the step of providing a corresponding location
based service(LBS) requested by said terminal
connected to said client server by using said
location information of said MS received by said
25 client sever.

31. A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **12**,

5 characterized in that the transmission/reception of the information between said PDE and said MS is being carried out by TCP/IP-based communication complying with IS-801-1 standard.

10 **32.** A method for providing the location information of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **13**,

characterized in that the transmission/reception of the information between said PDE and said MS is
15 being carried out by TCP/IP-based communication complying with IS-801-1 standard.

33. A method for providing the location information of an MS by selectively using a DBM-based method and a
20 TCP/IP-based method as claimed in Claim **27**,

characterized in that the transmission/reception of the information between said PDE and said MS is being carried out by TCP/IP-based communication complying with IS-801-1 standard.

25 **34.** A method for providing the location information

of an MS by selectively using a DBM-based method and a TCP/IP-based method as claimed in Claim **28**,

characterized in that the transmission/reception of the information between said PDE and said MS is being carried out by TCP/IP-based communication complying with IS-801-1 standard.

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